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FIG.1.

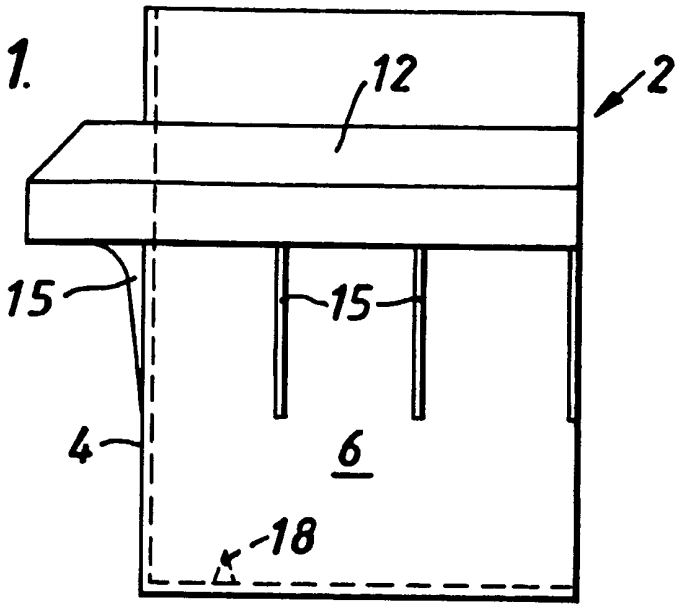



FIG.2.

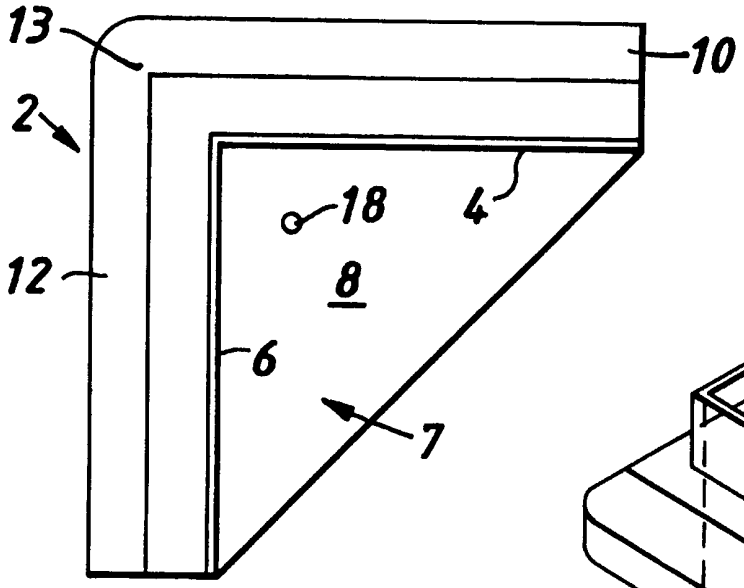



FIG.3.

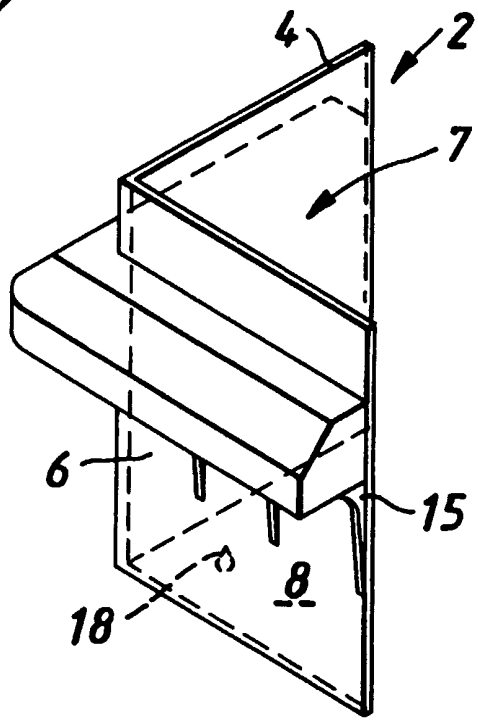
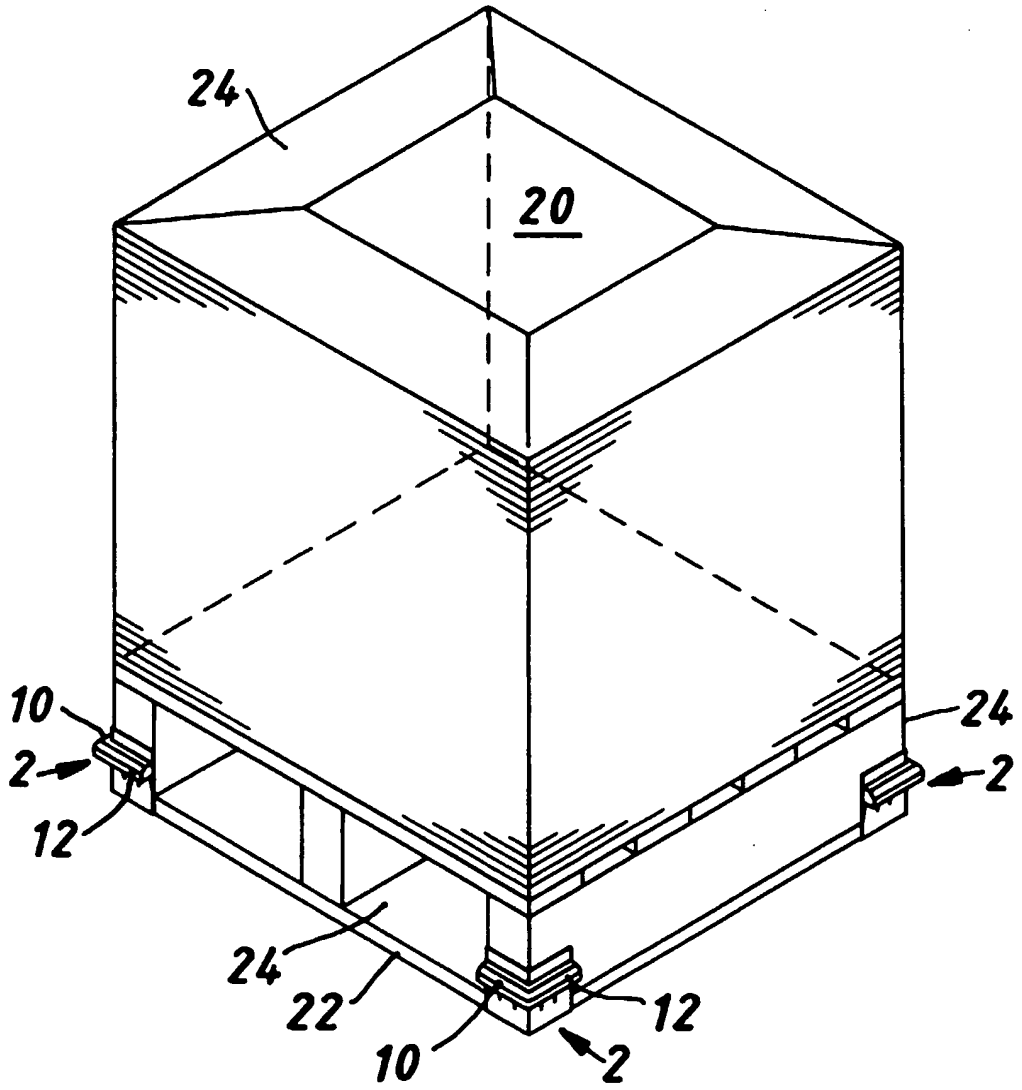


FIG. 4.



# CORNER ELEMENTS FOR PACKAGING

The present invention relates to packaging and particularly to elements for fitting to the bottom corners of shrink-wrapped packages.

The movement and carriage of large quantities of paper in sheet form are normally by means of a fork lift pallet on to which the paper is stacked. The stacked paper is then wrapped tightly with plastics sheeting to hold the stack of paper on to the pallet. The sheeting is then lightly heated to shrink the sheeting around the stack of paper and the pallet so as to hold the stack of sheets on to the pallet. However, particularly when pallets of paper are moved by lorry, the sideways forces on the stack of paper tends to cause the stack to shift from the pallet with consequent damage to the stack. Strapping has been used to stop this happening but strapping itself can damage the paper stack.

Accordingly, there is provided a shrink wrap fixing corner element comprising a pair of side engaging portions, each portion being relatively at right angles to the other, a bottom engaging portion extending across and connected to the side engaging portions, the side engaging portions each having an outwardly projecting ledge. The bottom engaging portion is preferably provided with an upstanding projection arranged to project into a space between the side engaging portions.

The invention further provides a method of wrapping a stack of paper, comprising loading the stack on to a pallet, to which are fitted corner elements, as defined above, wrapping plastics sheet material around the stack and the corner elements and shrinking the sheet material around the outward projecting ledges of the corner elements so as to engage the sheeting with the corner elements and securing the corner elements to the stack.

It will be appreciated that the corner elements are cheap to

manufacture and easy to secure to a pallet which may have ¾ ton of paper loaded on each pallet. The ledges grip the shrunk plastics sheeting so as to prevent the sheeting disengaging from the pallet, allowing the stack to slide off the pallet.

An embodiment of the invention will now be described with reference to the accompanying drawing by way of example, in which:-

Figure 1 is an elevation of a corner element according to the invention;

Figure 2 is a plan view of the element of Figure 1;

Figure 3 is a perspective view of the element of Figure 1; and

Figure 4 shows the corner elements of Figure 1 mounted to a pallet to illustrate the method of the invention.

Figures 1 and 2 show a corner element having two side engaging portions 4 and 6 and a bottom engaging portion 8. Each side engaging portion has an outward projecting ledge 10 and 12 which join to form a continuous ledge around corner 13. The ledges have strengthening webs 15, spaced around the outside of the corner elements so as to extend up the outside of each side engaging portion to the outward projecting ledge in order to assist in restraining the ledge against upward forces from sheeting wound over the corners, as will be described.

In order to retain the corner elements on the pallets, a projection or spike 18 is formed on the bottom engaging portion 8, which connects the side engaging portions 4 and 6. The projection 18 is arranged to project into space 7 between the side engaging portions. Whilst it is convenient to mould the corner element in one piece from a suitable plastics material, with the projection also moulded as one with the rest of the element, in order to keep the costs to a minimum,

the projection may be separately formed of hard plastic or metal.

Figure 4 shows a stack of paper 20 loaded on a pallet 22 with four corner elements 2 fitted to the foot of the pallet and plastic sheeting 24 wrapped around the stack 20 and around the corner elements at the foot of the pallet. The plastic sheeting 24 is wrapped reasonably tightly around the stack and then hot air is blown over the sheeting to shrink the sheeting on to the pallet and around the stack. The outwardly extending ledges 10 and 12 of each corner element maintain a grip on the plastics sheeting when shrunk and therefore resist any tendency for the shrink wrapping to pull away from the pallet itself which would result in the possibility of the stack sliding off the pallet. The projections 18 engage with the pallet to fix the elements 2 to the feet 23 of the pallet, preventing the elements 2 disengaging from the base of the pallet 22 should the pallet need to be repositioned before shrinking.

The shrink wrapping corner elements 2 may be formed so that the outward projecting ledges project not less than 10 mm, the outward projecting ledges projecting between ¼ and 1/6 of the height of each side engaging portion.

## CLAIMS

1. A shrink wrapping fixing corner element having side engaging portions (4, 6), each portion (4, 6) being relatively at right angles to the other, a bottom engaging portion (8) extending across and connected to the side engaging portions (4, 6), the side engaging portions (4, 6) each having an outwardly projecting ledge (10, 12).

2. A shrink wrapping fixing corner element according to claim 1 having a projection from the bottom engaging portion arranged to project into a space between the side engaging portions.

3. A shrink wrapping fixing corner element as claimed in claim 1 or 2 wherein the outward projecting ledges project not less than 10mm.

4. A shrink wrapping fixing corner element as claimed in any one of the preceding claims wherein the outward projecting ledges project between ¼ and 1/6 of the height of each side engaging portion.

5. A shrink wrapping fixing corner element according to any one of the preceding claims wherein strengthening webs are provided between the outer surfaces of the side engaging portions and the outward projecting ledges.

6. A shrink wrapping fixing corner element substantially as described with reference to the accompanying drawings.

7. A method of wrapping a stack of paper, comprising loading the stack on to a pallet, to which are fitted corner elements, as defined above, wrapping plastics sheet material around the stack and the corner elements and shrinking the sheet material around the outward projecting ledges of the corner elements so as to engage

the sheeting with the corner elements and securing the corner elements to the stack.

8. A method of wrapping the stack of paper as claimed in claim 7 and substantially as herein described.